

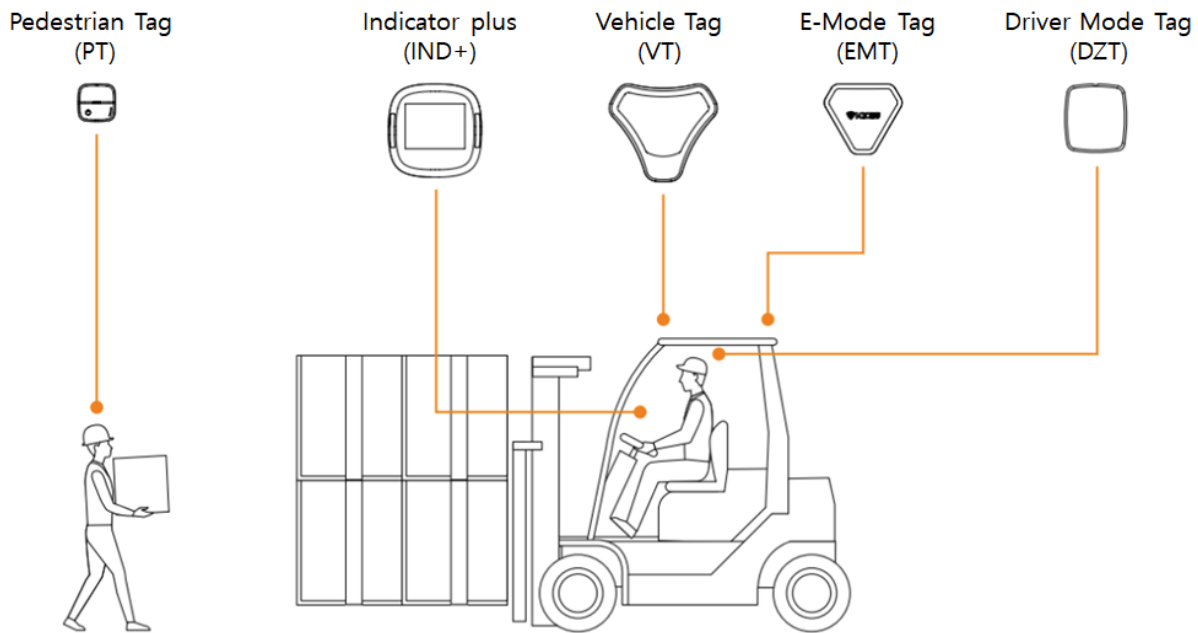
Driver Zone Tag

1. Overview

1) What is IPAS(Intelligent Proximity Alert System)?

IPAS is a safety assistance system that uses UWB (Ultra-Wideband) technology to precisely measure the distance between Vehicle Tags (VT) and Pedestrian Tags (PT), providing bidirectional proximity alerts to both pedestrians and drivers. This helps prevent collision accidents in industrial sites.

IPAS2 further enhances safety by allowing precise configuration of danger and caution zones, taking into account various factors such as vehicle movement direction and site-specific conditions. This enables the establishment of a more effective and safer working environment.



* The PT (Pedestrian Tag) and VT (Vehicle Tag) are UWB (Ultra-Wideband) tags developed by our company. These devices communicate with each other via UWB technology to measure distance and provide alerts to users for collision avoidance purposes.

2. What is the Driver Zone Tag?

1) Purpose

The Driver Zone Tag is designed to limit PT-VT alarm activation when a worker carrying a Pedestrian Tag (PT) operates a vehicle equipped with a Vehicle Tag (VT).

2) Function

To prevent alarm activation, a Driver Zone Tag (DZT) is installed inside the vehicle.

When the first PT is detected within a certain range (1.0–1.5m), the PT alarm is not triggered.

2. Specifications

1) Software Function Definition

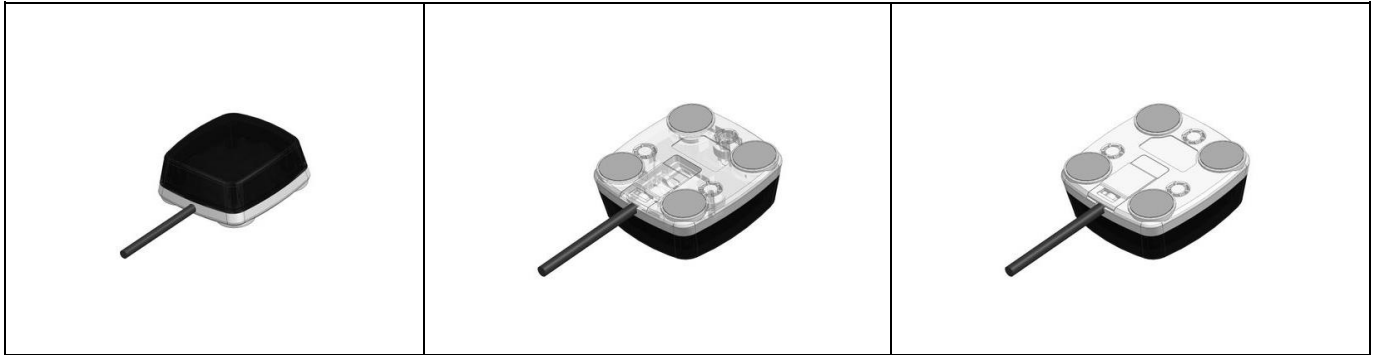
Distance is measured using TWR with the DZT at each PT communication interval (500ms).

When the PT alarm is off, TWR is not performed with any VT other than the registered DZT ID.

2) Hardware Specifications

ITEM		SPECIFICATION			
Input Voltage		12, 24, 48 Vdc (Rated voltage)			
Current consumption		Avr. 100mA@12V			
Processor		Cortex-M3 32bit MCU, GD32F103TBU6, Flash 128KB, RAM 20KB, 36 Pins, 108MHz			
Display		Status LED 1set			
Sensor		6-Axis(Gyro + Accelerometer, ICM-42605(TDK))			
Interface	wireless	UWB			
	wired	RS232			
UWB RF Parameter	Frequency	6489.6MHz			
	Bandwidth	499.2MHz			
	Conducted Rx Sensitivity	-94.3dBm/500MHz (6.8Mbps, PER 1%)			
	Conducted Tx Power Density	Max -41.3dBm/MHz			
	Data rate	6.8Mbps			
Connector		■ Part No. : MB08MBAFF08ST(Female 8 Pins)			
		Pin No	Pin Name	Pin Type	Description
		1	VBAT	PI	External Voltage(12 ~ 80V)
		2			
		3	RS232_TX	DO	RS232 Transmit Data Output
		4	RS232_RX	DI	RS232 Receive Data Input
		5			
		6			
		7	GND		Ground
		8			
Environment	Operating temperature	-30°C ~ +85°C			
	Storage temperature	-40°C ~ +85°C			
Ingress Protection Rating		IP65			

3. Design



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Part 15.250(c) Operation on board an aircraft or a satellite is prohibited. Devices operating under this section may not be employed for the operation of toys. Except for operation onboard a ship or a terrestrial transportation vehicle, the use of a fixed outdoor infrastructure is prohibited. A fixed infrastructure includes antennas mounted on outdoor structures, e.g., antennas mounted on the outside of a building or on a telephone pole.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with FCC RF exposure requirement.